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AUTHOR Wright, David W.; Neuliep, James W.
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ABSTRACT

Adopting the position, expressed by A. P. Bochner in his critique of small group communication research, that placing measurement in a secondary role increases the danger of accepting the claims of experiments with excessive error, this paper examines nine current quantitative small-group communication studies. Using a schema developed by J. F. Cragan and D. W. Wright outlining three major lines of small group research--original criticism and traditional and new lines of research--the paper examines the studies in terms of their objectives, estimation of experimental effects, and reliability measurement. The paper reports that research objectives and utilization of the task dimension remain unclear in current small group communication research while methods of computation are improved. It concludes that the Cragan and Wright schema is useful in providing a direction for future research. (Author/FL)

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TASK AND INSTRUMENTATION AS FACTORS JEOPARDIZING THE VALIDITY OF PUBLISHED GROUP COMMUNICATION RESEARCH 1980-81 BOCHNER REVISITED

DAVID W. WRIGHT
DEPARTMENT OF COMMUNICATION
ILLINOIS STATE UNIVERSITY

JAMES W. NEULIEP
DEPARTMENT OF COMMUNICATION
UNIVERSITY OF OKLAHOMA

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ABSTRACT

This paper replicates the procedures outlined by Bochner (1974) in his critique of small group communication research. In addition to investigating task and measurement variables, this paper categorizes nine current quantitative small group communication studies using the schema developed by Cragan and Wright (1980). Each study is examined in terms of: (1) the objective of the study, (2) the estimation of experimental effects, (3) the reliability measurement, and (4) categorization into a line of research. The paper concludes that research objectives and utilization of the task dimension remain unclear in current small group communication research while methods of computation are improved. The Cragan and Wright (1980) schema is viewed as useful in providing a direction for future research.

TASK AND INSTRUMENTATION AS FACTORS JEAPORDIZING THE VALIDITY OF PUBLISHED GROUP COMMUNICATION RESEARCH 1980-81 BOCHNER REVISITED

In their article, "Small Group Communication Research of the 1970's; A Synthesis and Critique" Cragan and Wright (1980) created a categorization schema of the speech communication articles published in the area of small group communication during the decade of the 70's. In their schemata they outline three major lines of small group research including: 1) Original Criticism, 2) Traditional Lines of Research, and 3) New Lines of Research (p. 200). Within the category of original criticism are articles by Becker (1970), Bormann (1970), Gouran (1970) and others who were the first to initiate the criticism of small group research conducted during that time. The major concern of Becker's editorial note in Speech Monographs (1970), was that research in this area needed improvement. The reaction following the Becker (1970) article produced a dilemma. Should emphasis in research be placed on specific hypotheses and theory building, or should emphasis be placed on specific methods and measurement devices? Some researchers showed concern for theory building (Bormann, 1970; Gouran, 1970; Mortenson, 1970; Larson, 1971; Fisher, 1971), and others focused almost exclusively on measurement (Bochner, 1974). Bochner (1974) states that "placing measurement in a secondary role will increase the danger of accepting the truth claims of experiments which contain excessive error." (Bochner, 1974, p. 169). This article articulates the Bochner position and will replicate the procedures used in the 1974 article entitled, "Task and Instrumentation Variables as Factors Jeopardizing the Validity of Published Group Communication Research, 1970-71" (Bochner, 1974).

The purpose of this study was threefold; 1) It examined nine current quantitative studies in small group communication, 2) Each study was categorized

according to the line of research established by the Cragan and Wright (1980) study, 3) It replicated the tables presented in the original Bochner (1974) article, and made similar comparisons with the task and measurement variables with each of the nine studies.

At the time of the Bochner (1974) article the major journal publishing quantitative small group research from a speech communication orientation was Speech Monographs (now Communication Monographs). Since then Human Communication Research has evolved. This newer journal published primarily quantitative research and has since become a major output for scholars in the small group area of speech communication to publish their work. The nine studies that were used for analysis were quantitative studies chosen from Communication Monographs and Human Communication Research. It is important to place each of these studies into a line of research outlined by Cragan and Wright (1980) to set a frame of reference for future research. In the examination of the task and measurement variables the same criteria was used that Bochner (1974) used in his original article.

In the examination of these article three questions were addressed:

1. Does the published research indicate any areas of general agreement about what should be measured?
2. Does the published research clearly report an unbiased estimate of experimental effects?
3. Are the dependent variables reliably measured? (Bochner, 1974, p. 171)

The first question dealt directly with the purpose or objective of each study. Were the objectives of each study comparable? The second question was concerned with the identification of any similarities or disimilarities within the task dimension in each study. Were the tasks comparable? What was the

function of the task, how was it controlled? The third question dealt with the reliability estimates of the dependent variable and if the estimates were significant. A fourth question in addition to the three outlined by Bochner (1974) was;

4. What is the current trend in small group research in terms of the categorization of lines of research?

PROCEDURE

Each of the nine articles; four from Communication Monographs and five from Human Communication Research were placed into the tables created by Bochner (1974). With the information outlined in TABLE I, the first two questions were addressed. TABLE II outlined the reliability estimates and methods of computation addressed in question three. TABLE III delineated the lines of research and the focus from question four.

The Purpose/Objective of the Studies

Upon close examination of the nine studies it was apparent that there was some agreement with the objective the researchers chose in studying small groups. Five of the studies examined communication variables that affect either the outcome of the group (Arntson, Mortenson, and Lustig, 1980; Jablin, 1981; Harper, and Askling, 1980); or were examined within a small group setting (Danowski, 1980; Bradley, 1980). Although each study investigated communication variables, there was little similarity among the variables studied. Arntson, et. al., (1980) examined predispositions towards verbal behavior (PVB) which was defined as a persons expectations concerning their own behavior. Jablin (1981) looked at brainstorming techniques within nominal and interacting groups. Harper and Askling (1980) were concerned with what they called "differences that make a difference", although it was never clear just what that definition implies.

Sex differences and their influence on opinion deviation was the focus of the Bradley (1980) study and to establish a relationship between network connectivity with membership uniformity was the emphasis of the Danowski (1980) study.

It can be seen that there was little similarity in terms of variables studied with these five studies. It can be suggested by these findings that researchers in group communication have yet themselves come to an agreement about what is important in the areas of communication variables that should be examined.

The remaining four studies had a similar focus with respect to the objective of their research in that in some way, each study was concerned with the process and/or stages and phases of group communication. Donohue et. al., (1981) examined the conceptualization of the group process and how certain groups "hold themselves together" during the decision-making process. This study emphasized theory construction within an interaction structure. Poole and Folger (1981) made an attempt to establish the validity of interaction coding schemes. The schemes under scrutiny included Bale's Interaction Process Analysis, Fisher's Decision Proposal Coding System, and Mabry's Pattern Variable Coding System. Although the study did not study the group process directly, it did examine the methodological approach from a process orientation. Poole (1981) compared two exclusive models of decision-making processes within a group. Hirokawa (1980) studied the process of effective and ineffective decision-making groups. Although 'process' seemed to be the overall purpose of these studies, only two (Poole, 1981; Hirokawa, 1980) are similar in respect to what type of process was being studied.

Estimation of Experimental Effects

This section dealt with the nine studies in terms of the utilization of

the task variable. Bochner (1974) stated that the research of the 70's had little similarity in the tasks assigned to groups. It seemed at that time as if the task dimension had little importance and was generally disregarded. From viewing TABLE I it was apparent that the task assignment made in these current studies showed little similarity also. Only three of these studies employed a consensus task. Although this may have suggested a degree of uniformity from a macroscopic viewpoint, a closer examination revealed discrepant information. None of the studies that use a consensus task choose a definitive method in the explanation of what it was the group was to come to a consensus on. Arntson et. al., (1980) had subjects reach consensus on "national issues", but neglected to specify what issues. Bradley's (1980) study had subjects reach consensus on "penalty options" and the appropriateness of each penalty but did not disclose to the reader what the penalties were or who they were for. The Poole and Folger (1981) study had the subjects watch videotapes of other groups reaching consensus and had them fill out questionnaires concerning their reactions to the videotapes. Two of the other studies in TABLE I used rank ordering as the task variable. The second part of the Poole (1981) study had subjects "agree on a diagnosis" which implied a consensus, but the focus of the study was on the rank ordering of topics for a term paper. The Hirokawa (1980) study used the NASA Moon Survival Problem as it's rank ordering task. The other four remaining studies showed no uniformity among the task variable selection. The task assigned to the groups ranged from group assignments (to be turned in at the end of the semester) Harper and Asklin, (1980), to simply asking the group to hold a discussion (Donohue et. al., 1981). From a macroscopic examination it was unclear exactly what the group task assignment actually was. In some cases the researchers simply left out any explicit detail to the type, nature, or a priori dimensions of the task variable.

Reliability Measurement

TABLE II presented the reliability estimates and methods of computation in the examination of the nine studies. In comparison with the results of the Bochner (1974) article it was obvious that in the area of reliability estimates the research has made advancements. Reporting the number of coders, the reliability of the coders, and the method of computation all exhibit what seems to be a conscious attempt at rigorous methodology. With the exception of the two studies which did not report the number of coders (Harper and Askling, 1980; Danowski, 1980) each study reported reliability. Across all studies (with the exceptions noted) the lowest reliability report was .04, with the highest ranging from .90 to .97. This was an improvement from the earlier reports of the Bochner (1974) study. In addition, six of the studies reported the number of coders used. Three of the studies did not report the number of coders (this included the two previously mentioned). However, it was noted that although the reliability reports were high, it usually included only two coders. Hirokawa (1980) used three coders with reliability reports of .82 to .96. Bradley (1980) reported using five coders with reliability at .67, .74, and .76. Jablin (1981) used eight coders in the coding of interaction groups but used only two coders in the coding of nominal groups. The reliability of the eight coders was lower at .70 to .75 than the reliability of the two coders which was reported at .92. With such a diversity of reported reliability the results of the Jablin (1981) study were questionable. In quantitative studies, a reported reliability of .90 becomes less significant when only two coders are used. The higher the reliability in proportion with the number of coders should be a major concern of the researchers. According to these findings, it was not.

One area of methodology that persisted to be a problem in group communication research was the dependent measure. There was little, if any agreement

on the choice of dependent measures. Also, according to TABLE II it seemed that the researchers themselves defined what the dependent measure should be. Two of the studies (Danowski, 1980; Jablin, 1981) used self-report measures, but do not specify or give complete details on how the measures were used nor what they contain. Both studies did, however, employ rigorous methods of computation including the NEGOPY network analysis (Danowski, 1980) and the Jablin (1981) study which employs various statistical devices. This was a marked improvement in retrospect to the Bochner (1974) article in which the methods of computation included such items as "several checks" (Fisher, 1970). Two of the current studies have reliable dependent measures. Poole and Folger (1981) use the IPA, DPS, and the PVS instruments as their dependent measures, all of which have been successfully used in the past. Poole (1981) used the unitary and multiple sequence models in his comparison of decision-making groups. These measures, in addition to the cluster analysis used in the Poole (1981) study employed rigorous standards. The other studies had dependent measures which ranged from what was termed "cooperativeness" (Donohue et. al., 1981) (which consisted of a set of utterances) to behavioral, perceptual, and observational dependent measures set forth by Arntson (et. al., 1980).

Some general conclusions were made in regards to the methodology used in the nine studies:

1. In most cases, the number of coders was reported.
2. When the number of coders was reported, the reliability was usually high.
3. In most cases rigorous methods of computation were employed.
4. The dependent measures reported continue to lack focus and need clarification and definition.

Lines of Research

In the article "Small Group Communication Research of the 1970's; A Synthesis and Critique", Cragan and Wright (1980) outlined several lines of

research in which small group communication studies were categorized. From examination of TABLE III it was clear that one aspect each of the nine studies had in common was the line of research. Without exception each article was categorized into Cragan and Wright's (1980) number three category "New Lines of Research". As was mentioned earlier, five of the studies were placed into the area of "Communication Variables" that either affect the outcome of the group, or which were studied in the small group setting. Four of the studies were categorized into the area of "Process of Communication in Small Groups" (Cragan adn Wright, 1980). The benefits of such a categorization provide for the researcher a point of reference in terms of the current research, and a directional awareness for future research. The utility of such a schemata provides for the researcher in group communication a common ground with other researchers from which to generate future studies.

DISCUSSION

The past ten years was a critical time period for research in small group communication. The beginning of the 70's brought about sharp criticism of the methodology that researchers at that time were using. Since then, some areas have shown marked improvement, and others remain trouble spots. Most of the current research (as examined in this article) still lacked clear focus in terms of the objective or purpose of the study. What was it that the researchers were looking for? Scholars in this discipline need to come to a consensus themselves in the direction of their own research. The second area still in need of clarification was the utilization of the task dimension. Obviously, different tasks must be used to produce experimental or manipulative effects, but the research needs some general agreement on what type of tasks produce these results and which do not. This should be the primary concern

of the researchers. Third, the method of computation, reported number of coders, and the reported reliability of the coders have all shown an improvement over the last ten years. Rigorous standards were met and were employed by the experimenter in hopes of minimizing excessive error.

With these findings in mind, and the direction provided by the categorization of the lines of research (Cragan and Wright, 1980), future research in small group communication faces a difficult task.

TABLE I

Author/Issue	Purpose	Task	Conclusions
Poole, M.S., CM, 1981, 48	". . . compares two mutually exclusive models of small group decision-making processes."	I. "Their task was to rank order a list of topics for term projects . . ." II. "Their task was to agree on a diagnosis of the problem . . . "	". . . the results of this study support the multiple sequence model."
Hirokawa, R.Y., CM, 1980, 47, (312-321).	"To test the general hypotheses that substantial differences exist between the communication process within 'effective' and 'ineffective' decision-making groups."	"The decision task employed was the NASA Moon Survival Problem."	"Effective decision-making groups spend more time interacting."
Bradley, P.H., CM, 1980, 47, (101-110).	". . . examine the reactions to male and female opinion deviation under conditions of high and low demonstrated task relevant competence."	"Each discussant was then handed a list of penalty options and told that the groups task was to reach consensus concerning the most appropriate penalty."	". . . an individuals' internal status may be a more powerful determinant of his or her treatment and influence in decision-making groups than the person's sex."
Harper, N.L., Askling, L.R., CM, 1980, 47, (77-100).	". . . identify differences that make a difference in the communication of small groups engaged in producing multimedia messages."	"The course required that each group of students contact a client, a non-profit organization or university organization, to produce informational or documentary products."	"Communication in successful groups differed systematically from unsuccessful groups."
Danowski, J.A., HCR, 1980, 6, (299-308).	"To test the hypotheses that increasing group network connectivity is associated with increasing member uniformity."	"Self-report data were gathered from all employees."	". . . production and innovation groups show relationships between connectivity and attitude-belief uniformity."

TABLE I (cont.)

Author/Issue	Purpose	Task	Conclusions
Arntson, P., Mortenson, C.D., Lustig, M.W., HCR, 1980, 6, (240-252).	". . . to test the interaction between people's predispositional states and specific situational variables."	I. "Subjects were asked to come to a consensus about what the general public considered to be the three most important national issues." II. "The subjects were to come to a consensus about the relative importance of five communication concepts."	". . . differences in the behavior of PVB subjects hold in structural as well as unstructural settings . . . PVB subjects differ in: 1. Dominance, 2. Frequency, and 3. Are differentially related to task and social functions."
Donohue, W., Hawes, L.C., Mabee, T., HCR, 1981, 7, (133-146).	". . . to determine how groups hold themselves together and make decisions over time." ". . . conceptualize group process." ". . . build a theory of communication rooted in interaction structure."	". . . discuss issues and exchange information related to the large public speaking class . . . discuss campus problems . . . update the curriculum in the nursing school . . . discuss affirmative action guidelines."	". . . the maintenance of cooperativeness seems to essentially be a twofold process."
Poole, M.S., Folger, J.P., HCR, 1981, 8.	"A new methodological approach to establish the validity of interaction coding schemes."	"Subjects viewed videotapes of two people trying to reach consensus on the proposition that "women should be allowed to seek abortion on demand" then completed a questionnaire on the interaction of the subjects in the videotape."	"The IPA system represented subjects interpretations of decision-making interaction better than the DPS which in turn was better than the PVS."
Jablin, F.M., HCR, 1981, 6, (245-258).	"To explore a number of inconsistent findings in (earlier) brainstorming research."	". . . subjects were given a problem and asked to brainstorm for 15 minutes."	"Nominal brainstorming groups produce more brainstorming ideas than interacting groups."

TABLE II

Author	Dependent Variable	No. Coders	Reported Reliability	Method of Computation
Arntson, Mortenson, Lustig	I. Behavioral, Perceptual, and Observational. II. 5 Behavioral and 3 Perceptual.	I. 2 II. Not Reported	I. .90 II. Not Reported	I. F Test II. Matched T-Test
Donohue, Hawes, Mabee	Cooperativeness	2	Unitized .04 to .10 Categorized .85 to .94	Markov analysis
Poole, Folger	IPA, DPS, PVS	2	.90 .90 .87	Chi-square
Jablin	Self-report measure Observed measure	Nominal-2 Interaction-8	Nominal .92 Interaction .70 to .75	ANOVA, MANOVA T-Test Wilk's Lambda
Poole	Unitary Sequence Model Multiple Sequence Model	Not Reported	.90 .91	Cluster Analysis
Hirokawa	26 Category System	3	.82 to .96	Chi-square Markov, Time Series
Bradley	". . . the extent to which the high and low competent male and female deviates would be able to influence the majority during the discussion."	5	.74 .67 .76	F Test
Harper, Askling	?	Not Reported	Not Reported	F Test
Danowski	Self-report measure	None Reported	Not Reported	NEGOPY network analyst

TABLE III

Arntson, Mortenson, Lustig	III.	New Lines of Research/Communication Variables Affecting Group Outcomes
Donohue, Hawes, Mabee	III.	New Lines of Research/Process of Communication in Groups
Poole, Folger	III.	New Lines of Research/Process of Communication in Groups
Jablin	III.	New Lines of Research/Communication Variables Affecting Group Outcomes
Danowski	III.	New Lines of Research/Communication Variables Studied in Small Group Settings
Poole	III.	New Lines of Research/Process of Communication in Groups
Hirokawa	III.	New Lines of Research/Process of Communication in Groups
Bradley	III.	New Lines of Research/Communication Variables Studied in Small Group Settings
Harper, Askling	III.	New Lines of Research/Communication Variables Affecting Group Outcomes

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